UNITED STATES PATENT AND TRADEMARK OFFICE

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09/899,658	07/05/2001	Martin Larsson	010315-158	8479

7590 07/16/2004	EXAMINER
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	ART UNIT	PAPER NUMBER
P.O. Box 1404	2662	
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9,10,12,13 and 15-28* is/are rejected.

7)☒ Claim(s) *8,11 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

Claim Rejections—35 U.S.C. 112, Second Paragraph:

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 1-9 and 20-28 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

With regard to claims 1-9, a broad range or limitation together with a narrow range or

limitation that falls within the broad range or limitation (in the same claim) is considered

indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent

protection desired. Note the explanation given by the Board of Patent Appeals and Interferences

in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad

language is followed by "such as" and then narrow language. The Board stated that this can

render a claim indefinite by raising a question or doubt as to whether the feature introduced by

such language is (a) merely exemplary of the remainder of the claim, and therefore not required,

or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte*

Steigewald, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex*

parte Hasche, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad

recitation "within a range of about 1 kHz to about 30 MHz", and the claim also recites,

"preferably one or several of 100-1800 kHz..." which is the narrower statement of the

range/limitation. Claims 2-9 depend on claim 1 and are therefore similarly rejected.

According to claim 5, multiple packets are transmitted on each frequency and/or channels are shared and/or packets are arranged with digital signatures. The meaning of this phrase, with its multiple use of "and/or" is unclear. In this office action it is assumed that the meaning is that the packets are multiplexed.

Claims 10-12, 13, 20, and 22 have WPPTP in parentheses. It is unclear whether (WPPTP) is intended to be a limitation. If it is intended that this be a limitation, WPPTP should not be in parentheses.

With regard to claims 20-28, claim 20 recites, "transferring said received communication protocol to or from a computer instruction signal." The meaning of this phrase is unclear. Claims 21-28 depend on claim 20 and are therefore similarly rejected.

Claim 22 recites the limitation "the control connection." There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections—35 U.S.C. 102(e):

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4.   The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

5.   Claims 10 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Comstock.

With regard to claims 10 and 20, Comstock teaches a wireless data communication

system, including at least one client workstation ((mobile node 112 in Fig. 2) and at least one

service provider station (foreign network 109 in Fig. 2), wherein the wireless communication is

carried out between the client workstation and the service provider station (this communication

is inherently carried out by radio transmitting stations), wherein the client workstation and the

service provider station are each arranged with means to generate a communication protocol

(L2TP) which allows a PPP to be tunneled through an IP network (Internet) (an IP network

inherently uses data packets; abstract; Fig. 2 depicts the tunneling of an IP packet using PPP, and

the tunneling of PPP using L2TP; column 4, lines 7-27).

Claim Rejections—35 U.S.C. 103(a):

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8.   Claims 1-3, 5, 6, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock.

With regard to claim 1, Comstock teaches a wireless data communication system, including at least one client workstation ((mobile node 112 in Fig. 2) and at least one service provider station (foreign network 109 in Fig. 2), wherein the wireless communication is carried out between the client workstation and the service provider station (this communication is inherently carried out by radio transmitting stations), wherein the client workstation and the service provider station are each arranged with means to generate a communication protocol (L2TP) which allows a PPP to be tunneled through an IP network (Internet) (an IP network inherently uses data packets; abstract; Fig. 2 depicts the tunneling of an IP packet using PPP, and the tunneling of PPP using L2TP; column 4, lines 7-27). Comstock fails to teach packet transmission using a frequency of about 1 KHz to about 30 MHz. It would have been obvious to

one of ordinary skill in the art to use this frequency range as a matter of design choice if this

frequency band is available for use, since the main motivation to use a particular frequency range

is its availability, given the scarcity of the radio frequency resources.

With regard to claim 2, the conversion means, which automatically divides computer

generated messages to be transmitted into data packets with a destination address, keys a

transmitting function of the transceiver and sends the data packets through the transceiver is

inherent to the any packet network of Comstock because it is necessary to packetize and

reassemble exchanged messages.

With regard to claim 3, the transceiver of Comstock inherently scans the radio

frequencies for detection of a data packet. Every transceiver inherently performs this function.

With regard to claim 5, Comstock fails to teach that multiple packets are transmitted on

each frequency and/or channels are shared and/or packets are arranged with digital signatures.

Examiner takes Official Notice that multiplexing has been well known in the art. It would have

been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it

teaches that multiple packets are transmitted on each frequency and/or channels are shared

and/or packets are arranged with digital signatures because multiplexing has been well known in

the art as a means for allowing multiple users to simultaneously use common resources.

With regard to claim 6, Comstock fails to teach that the packets are encrypted. Examiner

takes Official Notice that encryption has been commonly used in the art. It would have been

obvious to one of ordinary skill in the art to modify the invention of Comstock so that the

packets are encrypted because Examiner takes Official Notice that encryption has been well

known in the art as a means for providing secure communications.

With regard to claim 19, Comstock fails to teach packet transmission using a frequency of about 1 KHz to about 30 MHz. It would have been obvious to one of ordinary skill in the art to use this frequency range as a matter of design choice if this frequency band is available for use, since the main motivation to use a particular frequency range is its availability, given the scarcity of the radio frequency resources.

9.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Lane et al.

With regard to claim 4, Comstock fails to teach that data is compressed before transmission. Lane et al. teaches compression and decompression of data signals (abstract). It would have been obvious to one of ordinary skill in the art to modify the invention of Comstock so that data is compressed before transmission, as in Lane et al, because such an arrangement would reduce the bandwidth required for transmission.

10.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Lang.

With regard to claim 7, Comstock fails to teach that the client station is arranged with a security key, and an authentication device is arranged to provide an additional layer of security, by verifying whether a client station requesting access to the service provider station possess the security key before access to the service provider is accepted. Lang teaches a security key and an authentication device (abstract). It would have been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it teaches that the client station is arranged with a

security key, and an authentication device is arranged to provide an additional layer of security, by verifying whether a client station requesting access to the service provider station possess the security key before access to the service provider is accepted, as suggested by Lang, because such an arrangement would provide security to the system.

11.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Schwab.

With regard to claim 9, Comstock fails to teach a security host, which prompts the client to enter a username and a password, said security host being arranged to allow the service provider station to initialize the communication means before running the security functions and to directly initialize the communication means connected to the security host without security checks from the security host, before access being accepted. Schwab et al teaches a security host located between a modem and a communication server (abstract; column 4, lines 53-56). A user name and password are entered (column 6, lines 42-59). Neither Comstock nor Schwab teaches that the security host is arranged to allow the service provider to initialize the communication means before running the security functions or that the security host directly initializes the communication means connected to the security host without security checks from the security host, before access is accepted. Examiner takes Official Notice that it has been common practice in the art for the security host to be arranged to allow the service provider to initialize the communication means before running the security functions and that the security host directly initializes the communication means connected to the security host without security checks from the security host, before access is accepted. It would have been obvious to one of ordinary skill

in the art to modify the teaching of Comstock so that it teaches that the security host is arranged

to allow the service provider to initialize the communication means before running the security

functions and that the security host directly initializes the communication means connected to the

security host without security checks from the security host, before access is accepted because

Examiner takes Official Notice that such an arrangement has been common practice in the art as

a means for allowing a connection to be made prior to authentication so that authentication can

be performed after the initial connection is established.

12.   Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Comstock in view of Tai.

With regard to claim 12, Comstock fails to teach that the communication protocol

(WPPTP) uses an enhanced Generic Routing Encapsulation (GRE) mechanism to provide flow

and congestion-controlled encapsulated data packets. Tai teaches GRE (claim 11). It would have

been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it

uses GRE to provide flow and congestion-controlled encapsulated data packets, as suggested by

Tai, because such an arrangement would provide security for the communications.

With regard to claim 13, Comstock fails to teach that the tunnel is defined between a pair

of Wireless Network access Server (WPNS) and a communication protocol Access Concentrator

(WPAC). Tai teaches that a tunnel is defined between a network access server and an access

concentrator (column 22, lines 42-48). It would have been obvious to one of ordinary skill in the

art to modify the invention of Comstock so that it teaches that the tunnel is defined between a

pair of Wireless Network access Server (WPNS) and a communication protocol Access

Concentrator (WPAC) because such an arrangement would provide a means for wirelessly

tunneling packets.

13.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in

view of Hood et al.

        With regard to claim 15, Comstock fails to teach that the plurality of connection sessions

is multiplexed on a single tunnel. Hood et al. teaches multiplexing of encapsulated (and therefore

contained within a tunnel) data (column 1, lines 46-50). It would have been obvious to one of

ordinary skill in the art to modify the invention of Comstock so that it teaches that the plurality

of connection sessions is multiplexed on a single tunnel because such an arrangement would

allow several communication sessions to use the tunnel at one time.

14.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in

view of Hood et al. and Tai.

        With regard to claim 16, Comstock fails to teach that the point-to-point protocol packets

are multiplexed and demultiplexed over a single tunnel. Hood et al. teaches multiplexing of

encapsulated (and therefore contained within a tunnel) data (column 1, lines 46-50). Tai teaches

a tunnel of PPP packets (column 22, lines 5-11). It would have been obvious to one of ordinary

skill in the art to modify the invention of Comstock so that it teaches that the point-to-point

protocol packets, as suggested by Tai, are multiplexed and demultiplexed over a single tunnel, as

suggested by Hood et al., because such an arrangement would allow several communication

sessions to use the tunnel at one time.

15.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in

view of Tai and Birrell et al.

        With regard to claim 17, Comstock fails to teach that the communication protocol Access

Concentrator (WPAC) is arranged to interface a network and control radio transceivers or

terminal adapters, logically terminate a communications session of a point-to-point-protocol link

control protocol, and if needed participate in point-to-point-protocol authentication procedures.

Tai teaches that an access concentrator terminates a communication session of a PPP link

(column 22, lines 24-28; column 22, lines 42-48). Birrell et al. teaches PPP with authentication

(column 2, lines 3-9). It would have been obvious to one of ordinary skill in the art to modify the

invention of Comstock so that it teaches that the communication protocol Access Concentrator

(WPAC) is arranged to interface a network and control radio transceivers or terminal adapters,

logically terminate a communications session of a point-to-point-protocol link control protocol,

as suggested by Tai, and if needed participate in point-to-point-protocol authentication

procedures, as suggested by Birrell et al., because such an arrangement would provide the system

with enhanced security.

16.   Claim 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock and

Tai, as applied to claim 13 above, and further in view of Baindur et al.

        With regard to claim 18, Comstock fails to teach that the Wireless Network access Server

(WPNS) is arranged for channel aggregation and bundle management for point-to-point-protocol

multilink protocol, logical termination of various point-to-point-protocol network control

protocols and multiprotocol routing and bridging. Baindur et al. teaches multilink PPP (abstract). Tai teaches that a network access server terminates a PPP session (column 22, lines 36-49). It would have been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it teaches that the Wireless Network access Server (WPNS) is arranged for channel aggregation and bundle management for point-to-point-protocol multilink protocol, logical termination of various point-to-point-protocol network control protocols and multiprotocol routing and bridging because such an arrangement would enable the system to service several PPP sessions simultaneously.

17.   Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Xu et al.

With regard to claim 23, Comstock fails to teach that for each communication protocol Access Concentrator (WPAC) and Network access Server (VWPNS) pair both a tunnel and a control connection exists. Xu et al. teaches that for every PAC—PNS pair both a tunnel and a control connection exist (column 13, lines 53-54). It would have been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it teaches that for each communication protocol Access Concentrator and Network access Server pair both a tunnel and a control connection exists, as in Xu et al., because such an arrangement would provide control over the tunnel.

With regard to claim 24, Comstock fails to teach that control connection is responsible for establishment, management, and release of communication sessions carried through the tunnel. Xu et al. teaches that the control channel is responsible for establishment, management,

and release of sessions carried through the tunnel (column 13, lines 54-56). It would have been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it teaches that a control connection is responsible for establishment, management, and release of communication sessions carried through the tunnel. Xu et al. teaches that the control channel is responsible for establishment, management, and release of sessions carried through the tunnel, as in Xu et al., because such an arrangement would enable the system to have control over the tunnels.

18.   Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock and Xu et al., as applied to claim 24 above, and further in view of Bertsekas et al.

With regard to claim 26, Comstock fails to teach that a sliding window protocol for flow control through the tunnel is used on the communication protocol by each side of the data exchange. Bertsekas et al. teaches a sliding window for flow control (pager 430). It would have been obvious to one of ordinary skill in the art to modify the invention of Comstock so that it teaches that a sliding window protocol for flow control through the tunnel is used on the communication protocol by each side of the data exchange, as in Bertsekas et al., because such an arrangement would provide effective flow control.

With regard to claim 27, Comstock fails to teach that the sliding window protocol allows acknowledgement of multiple packets with a single acknowledgement, and all outstanding packets with a sequence number lower or equal to the acknowledgement number are considered acknowledged. Bertsekas et al. teaches a sliding window for flow control (page 430). The sliding window protocol allows acknowledgement of multiple packets with a single acknowledgement,

and all outstanding packets with a sequence number lower or equal to the acknowledgement

number are considered acknowledged (page 430); each packet uses a sequence number and the

next expected number; packets up to number k+W-1 can be sent. It would have been obvious to

one of ordinary skill in the art to modify the invention of Comstock so that it teaches that the

sliding window protocol allows acknowledgement of multiple packets with a single

acknowledgement, and all outstanding packets with a sequence number lower or equal to the

acknowledgement number are considered acknowledged, as in Bertsekas et al., because such an

arrangement would provide effective flow control.

19.   Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in

view of Barker et al. Comstock fails to teach that time-out calculations are performed using a

time that the data packet corresponding to a highest sequence number being acknowledged is

transmitted. Barker et al. teaches that that time-out calculations are performed using a time that

the data packet corresponding to a highest sequence number being acknowledged is transmitted

column 6, line 52 to column 7, line 8). It would have been obvious to one of ordinary skill in the

art to modify the invention of Comstock so that it teaches that time-out calculations are

performed using a time that the data packet corresponding to a highest sequence number being

acknowledged is transmitted because such an arrangement would be useful for flow control and

error control.

Reasons for Allowance:

20.   The prior art does not teach or fairly suggest that the security arrangement consists of two hardware devices: a security host and a security card, the security host being arranged between the service provider station and the communication means, the security card generates different access codes every time unit, which are synchronized with a code generated at the security host every time unit and at connection time the client sends the code generated by the security card to the host and the code is correct, the security host accepts connection of the client with the service provider server, as specified in claim 8.

The prior art fails to teach or fairly suggest that the communication protocol (WPPTP) also queries the status of communicating stations, provides in-band management, allocates communication channels and places outgoing calls, notifies the service provider on incoming calls, transmits and receives user data with flow control in both directions, and notifies the service provider about disconnected calls, as specified in claim 11.

The prior art fails to teach or fairly suggest that the communication protocol (WPPTP) allows functions of devices for providing client stations temporary, on-demand point-to-point wireless network access, to be separated using a client-server architecture, as specified in claim 14.

Allowable Subject Matter

21.   Claims 8, 11, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 21, 22, and 25 would be allowable if rewritten to overcome the rejection(s) under

35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the

limitations of the base claim and any intervening claims.

Conclusion

22.   Claims 1-7, 9, 10, 12, 13, and 15-28 are rejected. Claims 8, 11, and 14 are objected to.

23.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Chuah et al. (Patent Nos. 6,577,644, 6,400,722, and 6,449,272), Scoggins et al.,

Loehndorf, Jr. et al., Bhagwat et al., Vermat et al., Sengodan, Ndousse et al., and Komisarczuk

are cited to show the state of the art.

24.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joe Logsdon whose telephone number is (703) 305-2419. The

examiner can normally be reached on Monday through Friday from 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou, can be reached on 703-305-4744. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joe Logsdon

Patent Examiner

Friday, March 19, 2004

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